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ABSTRACT

A study focusing on argument as a receiver-contained phenomenon assessed the differential importance of (new) arguments stimulated by a message, as opposed to (old) arguments previously integrated. Data were collected from 207 college students in a pretest, posttest, and delayed posttest design. The subjects provided information on their attitudes toward three topics (sports, job market, landlord-tenant relations), read messages related to the three topics, and completed measures of attitude change. Based on the pretest of student interest in the topics (salience), every subject served as an experimental subject for two topics and a control subject for the third topic. Perhaps the most important discovery was that, on a given topic, people differed in the importance previous beliefs had for them. Belief change was far more likely for people with lightly weighted contexts than for people with firmly anchored views, a finding of clear importance to those interested in either stimulating persuasion or immunizing against it. Persuaded subjects seemed not to have tight contexts surrounding the belief at issue, while resistant subjects showed strong contextual force even prior to the message. Related predictions regarding salience of topic were not supported. The results generally supported a model that characterized the elements of an argument as cognitions quantified by measuring subjective probabilities; the model explained 25% to 50% of the variance in reported adherence to an argument's claim. (RL)

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THE COGNITIVE CONTEXT OF ARGUMENT

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THE COGNITIVE CONTEXT OF ARGUMENT

If one model of communication has been more firmly endorsed by tradition and common sense than any other, it is source-message-receiver. With only minor distortions, more than two millenia of rhetorical and communication theory could be reorganized so that all the theories' main tenets apply clearly to source, message, receiver or their interactions, conceived in one way or another. Given the model's familiarity and the convenience of its fit to what we perceive as our subject matter, we might expect little difficulty in using it to analyze our knowledge about communication variables. In fact, we might even argue that the central distinction between a communication variable and a source (or message or receiver) variable is our ability to explicate a communication variable in terms of all three main characters in the model. This contrasts with a receiver variable, for instance, which is confined to a single conceptual role. In other words, if a variable is critical to the communication process, it ought to reappear in one guise or another in full-fledged descriptions of every component of the model. I propose argument as a concept which qualifies as a communication variable.

Viewed from the standpoint of source, argument is the creative, generative process known classically as invention. This concept encompasses the motives that might influence a person to generate a lie, the beliefs or repertoires among which an appropriate conversational reply is found, the processes by which potential messages are dry-run and selected for use. Research stimulated by this perspective is rarer than that which flows from the message and receiver orientations; nonetheless, a complete description of a communication episode needs to account for the way in which the source

produces the message.

Argument is usually understood to be part of a message. This conception has come in for recent criticism, and various shifts in focus have been suggested (Willard, 1976; 1978; Hample, in press), but most communication researchers would probably class argument as an aspect of message. Depending on one's theoretic biases, an argument might be described as a set of belief statements, a disclosure, a syllogism, an explicated construction, or talk, for instance. In each case, reference is made to some characteristic or organization of a publicly available text. This overall perspective has led us to do discourse analysis, rhetorical criticism and experimental research on easily manipulable elements of the documentary argument (e.g., type of evidence, validity of syllogism). Most of what we know about argument per se comes from research done from an argument-as-message position.

The final vantage point--the one taken for the remainder of this paper --is the receiver's. When distinguished from the message orientation, argument-for-receiver displays itself as a purely cognitive phenomenon. The message is only the external stimulus to the argument; "arguing" strictly refers only to the way beliefs are processed within an individual's cognitive system (Hample, in press). A new belief may occur (for any one of several reasons), and is put in contact with previous beliefs. The individual then attempts to integrate the new belief with the old ones (which we will designate as the new belief's cognitive context). The argument may result in total rejection of the new belief, full integration into the cognitive system, or some intermediate solution involving partial adherence. Self-consciously or not, much recent empirical work can be summarized in these terms (Anderson, 1970; 1971; Wyer, 1974; Fishbein & Ajzen, 1975; Danes, 1978; Danes, Hunter & Woolfel, 1978). Working with different formulations

of the basic problem--how does one set of beliefs influence or generate another?--these investigators have produced a family of related models of argument (I see attitude, belief and impression as merely being specialized names for argument conclusion).

A Cognitive Model of Argument

Previous work on one particular model of argument (Hample, 1977; 1978; 1979) has shown that belief in an argument's claim is accurately predicted by this multiple regression equation:

$$p(C) = \beta_1\ p(D)\ \ p(C|D) + \beta_2\ p(\bar{D})\ p(C|\bar{D}).$$

The equation is expressed in terms of the subjective probabilities that claim (C) and data (D) are believed, thought false ($\bar{D}$) or assume one another ($C|D$). Adherence to the claim is said to be a function of two considerations: (1) the probability that the data are true times the likelihood that the claim is true if the data are, and (2) the probability that the data are false times the probability that the claim is true given that the data are false. Empirically determined constants (β_1 and β_2) give optimal weights to these two considerations. The model was derived from work done by McGuire (1960) and Wyer (1974; Wyer & Goldberg, 1970). Hample's studies show that it typically explains between a quarter and half of the variance in adherence to the claim.

The two halves of the predictor have different theoretical interpretations. The first half--$p(D)\ p(C|D)$--expresses the syllogism, "D is true; if D is true, C is true; so C is true." In a persuasive situation where the messages stimulates hearers to think that D is true and that it proves C, the first half of the predictor quantifies the impact of the message-

induced syllogism. The second half, on the other hand, measures the effect of all arguments other than the one presented. The syllogism reflected in $p(\bar{D})\ p(C|\bar{D})$ is, "D is false; if D is false, C is true; so C is true." This syllogism encompasses in the strength of its claim all reasons except D for believing C (or perhaps more precisely, all reasons completely independent of the first syllogism). If we conveniently restrict the message to one argument, then, the second syllogism reflects the force of arguments already known; this is the cognitive context of the argument at issue.[1]

The purpose of this report is to illuminate the differing roles played by the message- and context-based predictors of adherence in persuasive situations.

The first half of the predictor reflects a familiar phenomenon: an argument designed to alter belief. When the message is successful in stimulating hearers to admit the truth of D, and so to believe C, this beta weight (β_1) ought to dominate the other. Hearers ought to be particularly susceptible to such persuasion when the topic at issue is not salient to them, since people are most persuasible when they are least informed (Converse, 1964; Salciel & Woelfel, 1975; Danes, Hunter & Woelfel, 1978; Danes, 1978; Jones, Rambo & Russell, 1978).

In contrast, one's cognitive context may serve to anchor belief so firmly that no change in adherence is possible upon exposure to the message. In such cases, we should expect β_2 to be more important than β_1. Similarly, β_2 should exert more influence on $p(C)$ for salient topics, on the grounds that cognitive contexts will be more elaborate for salient than for non-salient topics.

These considerations may be formally stated as four hypotheses, which will be tested in this study:

H1: For messages on salient topics, β_2 will be more important than β_1 in determining $p(C)$.

H2: For messages on nonsalient topics, β_1 will be more important than β_2.

H3: When messages succeed in changing beliefs, β_1 will dominate the prediction.

H4: When messages are not successful in changing beliefs, β_2 will dominate the prediction.

Method

Subjects were 207 undergraduates earning extra credit in a university-required public speaking course. Nearly all were juniors or seniors; 56% were male and 44% female. Data were provided on computer-scorable sheets. As a consequence, many individual item responses were uninterpretable. Although no students were dropped entirely, only about 180 to 200 responses were usable for any given item. Fifteen of the 207 only appeared for the first administration.

Data were collected at two sessions for each subject. The first administration consisted of the salience instrument, a pretest for the variables in the regression equation, two messages and a posttest. The second administration was held exactly one week later for each student; at that time, respondents filled out the pretest again and were then debriefed. Data were collected by students enrolled in my empirical methods course. About 35 subjects provided data at each of six scheduled times of day. Student's names were used to match first and second session results.

The salience instrument, following Hample (1977), called on students to list up to ten topics of current interest to them--i.e., those things

that the students read, thought or talked about the most. I inspected each list and coded subjects as mentioning or not mentioning the job market, landlord-tenant relations or sports. These are the message topics; salience was operationalized as inclusion on the list.

The pretest and posttests consisted of 15 items each. For each of the three topics, subjects estimated $p(C)$, $p(D)$, $p(\bar{D})$, $p(C|D)$ and $p(C|\bar{D})$ on seven point LIKELY-UNLIKELY scales. Reliability estimates for such items may be found in Hample (1975) and Cohen (1978). Items were ordered differently on the immediate posttest; the delayed posttest (at the second session) repeated the pretest. Examples of test items may be found in earlier reports.

Messages were selected to represent a range of salience values and to promote comparability with earlier studies. On a pilot test, 46 undergraduates filled out the salience instrument. Sports were listed by 36 students, jobs by 22 and landlord-tenant relations by none.[2] The job market and tenant messages have both been used in previous studies; a new sports message castigating the owners of professional Chicago teams was written. All three messages were about 500 words long. Each subject read two arguments, but filled out scales for all three. Hence, every student was an experimental subject for two topics and a control for the third. Booklets were distributed randomly.

Results

All three messages were successful in stimulating belief change. To test the success of the persuasion induction, experimental and control groups were compared using t-tests at all three testing times; subjects were also coded as having read salient or nonsalient messages.

No significant differences between experimental and control groups appeared on the pretest. Both salient and nonsalient subjects showed significant belief change in the advocated direction on the immediate posttest (though for the salient tenant topic, $p<.10$). By the time of the delayed posttest, significant differences remain only for the nonsalient sports and tenant topics. Correlated t-tests were used to trace belief change over time for all groups. All experimental groups, whether salient or nonsalient, show significant change in belief from the pretest to the immediate posttest; though mean scores on the delayed test are regressing toward pretest positions, significant differences remain. No control group, salient or not, shows a significant change from the pretest to the immediate posttest; only the nonsalient job market controls showed a significant difference from pretest to delayed posttest. In sum, experimental groups were persuaded, while control groups were not.

Table 1 reports results which indicate the quality of the regression model. As in earlier work, pretest predictions are disappointingly weak. For both posttests, however, multiple correlations are usually significant, and typically explain between a quarter and half of the variance in p(C). These results support those of earlier studies.

INSERT TABLE 1

The beta weights of table 1 allow an evaluation of the first two hypotheses: that β_2 would be more important than β_1 in predicting p(C) when the message topic is salient, and that β_1 will have more weight for nonsalient topics. For both salience conditions, β_1 is more important. The message-induced syllogism is easily the more dominant determinant of belief for the experimental messages, and is slightly more important than

β_2 for the control groups, for whom the questionnaire may tend to exert some persuasive force (McGuire, 1960; Rosen & Wyer, 1972).

Though the beta weights of table 1 offer statistical support for the prediction that β_1 would outweigh β_2 for nonsalient topics, the prudent course is to suspend judgment on this hypothesis, for lack of a theoretical basis. Its original justification was that the message would have greater impact on the (presumably) more malleable subjects for whom the topic is nonsalient. In fact, the message's syllogism had an equally marked effect on the salient subjects, whose greater interest in the topic was expected to give them more cognitive inertia. This theory led directly to hypothesis 1, which clearly receives no support, as well as to hypotheses 2. The numerical evidence in support of hypothesis 2 is therefore bereft of grounding, and is consequently tabled.

INSERT TABLE 2

Hypotheses 3 and 4 specify that predictions of p(C) will be dominated by β_1 when belief in C changes in the advocated direction, and by β_2 for all other subjects. Table 2, which combines experimental and control subjects, reports the relevant results. The top half of the table shows a clear pattern: even when β_2 is reliably different from zero, β_1 is clearly more important, as hypothesis 3 predicts. Contextual matters were considerably more pressing for unmoved subjects, however; in the bottom half of the table, β_2 asserts itself. Even when the divergent results for the sports topic are included, β_2 is larger than β_1 five of nine times. In view of the likelihood (suggested by table 1 results) that the syllogisms stimulated by either the messages or the questionnaire had great presence for the

study's participants, this admittedly equivocal support for hypothesis 4 is all that can reasonably be expected from the bottom half of table 2. Perhaps the hypothesis' clearest support derives from contrasting the belief change results (where β_1 exceeds β_2 in every instance) with the no-change data. Both hypotheses 3 and 4 therefore receive support from table 2.

Discussion

The purpose of this work is to explore the impact of cognitive context on belief change, and to compare its effects with those of arguments stimulated by messages. The two conditions expected to trigger differential operation of the syllogism and contextual portions of the model are salience and belief change. These variables produced different results.

The belief change predictions were successful. For subjects who proved persuasible, cognitive context had virtually no impact on their belief in C. Critically, this was true on the pretest. That is, even prior to exposure to the message stimuli, these people had little operative context for their stated level of belief in C. The unpersuaded subjects, in contrast, show different pretest results: for two of three topics, not only is cognitive context a significant predictor of C, but context is more important than the message's argument. Here is reasonably clear evidence that the assumptions leading to the hypothesis are correct. The importance, if not the existence, of a cognitive context for a given topic seems to be a key variable in determining adherence to the claim of an argument. When the influence of context is great, belief change is unlikely. When context's strength is minimal, however, the argument stimulated by the message determines the eventual levels of adherence.[3]

These receiver-based results have straightforward implications for a source's inventional strategy. If pretests show that β_2 has little importance for one's target audience, persuasion can be immediately concentrated on building a constructive case for C. But if β_2 shows itself to be important, the persuader may have to identify the "other" arguments represented by $p(\bar{D})\ p(C|\bar{D})$ and engage in elaborate refutative work to clear the way for $p(D)\ p(C|D)$. If resistance, rather than persuasion, is one's object, these results point to the importance of establishing a cognitive context to surround and anchor p(C); in fact, inoculation may be understood in precisely these terms (McGuire, 1964; Burgoon & King, 1974; Burgoon, Cohen, Miller & Montgomery, 1978).

The salience predictions were less useful in understanding the cognitive dynamics under study. Salient topics were assumed to be more firmly imbedded in context, but results did not reflect that assumption. The message's argument dominated prediction of p(C) whether the topic was originally salient or not. Though a generalization at this point would obviously be hasty, in the present study, the message argument's presence (Perelman & Olbrects-Tyteca, 1969) seemed much more powerful than the salience (or presence) of the argument's cognitive context.

One other explanation for the failure to support the salience hypotheses is that the message may have unintentionally pre-empted an important part of the context. If, for example, one's context for Chicago sports teams were anchored by a belief in the owners' stinginess, the message would reflect one's context. The "other" arguments measured by $p(\bar{D})\ p(C|\bar{D})$ would therefore exclude an essential portion of cognitive context, and befoul the theoretical distinction between β_1 and β_2. This possiblilty seems likely, and could be assessed by studies using arguments on fictional topics, with controlled exposure to "other" information. An alternative

explanation for the non-support of hypotheses 1 and 2 is, of course, that they and their underlying theory are wrong. But this possibility is less attractive than the chance that salience or context have been improperly operationalized here.

Conclusion

Argument is a communication variable, and so may be properly understood from several perspectives. The present investigation focused on argument as a receiver-contained phenomenon. Though this point of view lacks the reassurance of having a publicly verifiable text to guide its perception of argument, it has the strength of allowing a close estimate of how people actually process beliefs.

In particular, the study assessed the differential importance of (new) arguments stimulated by a message, as opposed to (old) arguments previously integrated. Perhaps the most important discovery is that, on a given topic, people differ in the importance previous beliefs have for them; and further, that belief change is far more likely for people with lightly weighted contexts than for people with firmly anchored views. Since the importance of a group's cognitive contexts can be assessed prior to any message, this finding (and its generative methodology) are of clear importance to one interested in either stimulating persuasion or immunizing against it.

Results are generally supportive of a model which characterizes the elements of an argument as cognitions, and quantifies them through the measurement of subjective probabilities. These probabilities are consistently related to one another in ways predicted by Bayesian expressions of two syllogisms. The model as a whole explains between a quarter and half of the variance in reported adherence to an argument's claim.

Notes

[1]Of course, the message's argument may be a familiar one, and so be a part of one's cognitive context. Evidence for this possibility may be found later in this report: tables 1 and 2 both indicate that p(D) p(C|D) can be a significant predictor of p(C) before the message is presented. As the discussion section points out, however, the theory being explicated assumes that this possibility has negligible impact.

[2]Actually, sports was not the most salient topic: social life and school were each mentioned 41 times. However, these categories were unusually amorphous, and so were not used to construct messages.

[3]These last two sentences are true without exception, based on the results in table 2. Even for the sports topic in the no change condition, β_2 approached zero and β_1 dominated the prediction of p(C). These subjects are only anomalous in that p(C) p(C|D) seemed not to justify new belief levels; their cognitive dynamics conform to those expected.

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Table 1

Multiple Regression on p(C): R, βs, N.

Testing Time:	1			2			3		
Topic:	J	T	S	J	T	S	J	T	S
Condition									
				R					
Salient									
Exp.	.558***	.133	.379*	.577***	.683***	.607***	.509***	.786**	.342†
Con.	.625**	.458	.310	.480†	.751*	.574***	.547*	.699*	.492**
Nonsalient									
Exp.	.285	.255*	.442**	.653***	.667***	.650***	.559***	.631***	.557***
Con.	.558*	.453**	.245	.269	.530***	.283	.529†	.614***	.477*
				βs					
Salient									
Exp.									
β_1	.215*	.132	.406**	.536***	.614*	.505***	.373***	.805**	.314*
β_2	-.464***	-.001	.153	-.134	.308	-.268*	-.288**	.033	-.115
Con.									
β_1	.559*	.476	.252	.145	.879*	.602***	.565**	.564†	.497**
β_2	-.114	-.332	-.133	-.411†	-.303	.126	-.132	-.462	.094
Nonsalient									
Exp.									
β_1	.078	.181†	.459***	.559***	.661***	.619***	.323*	.546***	.499***
β_2	-.244	-.179†	.291*	-.196	-.024	-.075	-.365**	-.208*	-.185
Con.									
β_1	.089	.333*	.248	.254	.377**	.220	.411†	.175	.456**
β_2	-.531*	-.247†	.012	-.118	-.263†	.135	-.263	-.536***	-.068
				N					
Salient									
Exp.	81	12	50	81	13	50	81	13	50
Con.	22	11	37	22	11	37	22	11	37
Nonsalient									
Exp.	46	102	60	46	104	59	45	103	60
Con.	21	49	36	21	49	36	21	48	36

Note. "Exp." refers to experimental subjects; "Con." refers to control groups. "J" is the job market message; "T" is the landlord-tenant argument; and "S" is the Chicago sports teams message.

†p<.10

*p<.05

**p<.01

***p<.001

Table 2

Beta Weights for Subjects Who Did or Did Not Change Belief in p(C)

Testing Time:	1	2	3
Condition			
Topic			
Belief Change			
Job Market			
β_1	.275**	.602***	.479***
β_2	-.164	-.102	-.174
N	98	98	98
Tenant			
β_1	.176	.744***	.589***
β_2	-.032	-.006	-.204*
N	93	96	95
Sports			
β_1	.426***	.598***	.441***
β_2	.142	-.098	-.061
N	90	90	90
No Belief Change			
Job Market			
β_1	.252*	.291**	.372***
β_2	-.486***	-.407***	-.373***
N	72	72	71
Tenant			
β_1	.149	.510***	.335***
β_2	-.396***	-.096	-.364***
N	82	82	81
Sports			
β_1	.375***	.443***	.417***
β_2	.063	.011	-.115
N	93	92	93

$^{\cdot}p<.10$

$^{*}p<.05$

$^{**}p<.01$

$^{***}p<.001$